and alcohol consumption, SADD score did not predict subsequent drinking behaviour in ALD patients.

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031 LONG TERM STUDY OF RE-INFECTION FOLLOWING SUCCESSFUL ERADICATION OF *HELICOBACTER PYLORI* INFECTION

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Introduction: *H pylori* infection is known to cause a number of diseases including peptic ulcer disease and gastric carcinoma. Successful eradication dramatically reduces recurrent ulcer disease. Re-infection rates are likely to be related to the population prevalence of infection. Small, short term studies suggest annual HP re-infection rates in excess of 1%. When we previously attempted to study re-infection rates (*Q J Med* 1993;**86**:375–82), the majority of ''re-infections'' occurred within the first year suggesting recrudescence rather than true re-infection. We now report what are likely to be genuine re-infection rates by studying a large cohort of patients over a much longer period.

Methods: Following eradication, patients were followed up predominantly by means of ^{13}C and ^{14}C urea breath test. Patients were included if at least one test was negative at 1 year or beyond. The rate of re-infection was then calculated in the follow up period beyond 1 year.

Results: Follow up was available for 2676 patients up to a maximum of 13 years post-eradication. After exclusion of patients without at least one negative test at 1 year or greater, 930 remained (mean age 56 (SD 14) years, 614 men) with 2733 years of follow up data available beyond 1 year (mean 3 (SD 2) years). 12 re-infections occurred (seven at 2 years post-eradication, two at 3 years, two at 4 years, and one at 5 years) giving a re-infection rate of 0.44% per year. The mean age of these patients was 50 years (SD 13) and nine were men. No statistically significantly difference was seen for sex or age and all 12 were white.

Discussion: Small, short term studies of *H pylori* ''re-infection'' following eradication have probably overestimated the true rate of re-infection, largely as a result of including recrudescence. We have avoided this potential bias by excluding the first year following eradication from analysis. This is the largest study of *H pylori* re-infection with the longest follow up described to date. Re-infection following successful eradication is a rare phenomenon. Patients clear of infection at 1 year in the UK are very unlikely to re-acquire *H pylori*.

032 REDUCED GASTRIC AND DUODENAL ULCER INCIDENCE WITH ESOMEPRAZOLE IN AT-RISK PATIENTS TAKING CONTINUOUS NSAID THERAPY

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Introduction: Long term non-steroidal anti-inflammatory drug (NSAID) use can lead to gastric and duodenal ulcers (GU/DU).

Methods: 1429 patients with a chronic inflammatory condition at risk of developing ulcers (≥60 years old and/or with history of GU/DU) were randomised into either of two placebo controlled, parallel group, multicentre studies of similar design. Patients (*H pylori* negative, ≥18 years old) received placebo or esomeprazole 20 or 40 mg orally once daily for 6 months, in addition to their NSAID therapy. The primary variable was the proportion of patients without GU/DU throughout 6 months' treatment (determined by endoscopy at 1, 3, and 6 months).

Results: Esomeprazole 20 and 40 mg significantly reduced the ulcer incidence relative to placebo (see table). The number needed to treat (NNT) to avoid one ulcer case over 6 months for patients taking esomprazole 20 and 40 mg was 9 and 8, respectively. NNTs were similar for patients taking non-selective NSAIDs (10 and 9, respectively (n = 334 and n = 326)) and COX-2-selective NSAIDs (7 and 8, respectively (n = 125 and n = 141)). Both doses were well tolerated.

Abstract 32 Life table estimates of the proportion of patients without GU/DU at 6 months (95% CI)

Placebo (n = 452)	Eso 20 mg (n = 459)	Eso 40 mg (n = 467)
83.0 (79.2–86.8)	94.8 (92.6–97.0)*	95.4 (93.4–97.4)*

*$p<0.0001$ *v* placebo.

Conclusion: Esomeprazole prevents GU/DU development in at-risk patients taking long term NSAIDs including COX-2 selective NSAIDs.

033 *IL-8*–251 PROMOTER POLYMORPHISM AND RISK OF GASTRIC CANCER IN WHITE AND JAPANESE POPULATIONS

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Background: Interleukin-8 is of critical importance in the inflammatory response to *Helicobacter pylori*. It is a powerful chemotactic factor that induces many of the early inflammatory responses to the infection. We have recently shown that a functional promoter polymorphism (*IL-8*–251 A/T) is associated with an increased risk of developing the pre-malignant changes of hypochlorhydria and gastric atrophy. We have also demonstrated that carriage of the *IL-8*–251 A allele is associated with higher IL-8 levels and a more pronounced inflammatory response in the gastric mucosa.

Aim: To evaluate the effect of the *IL-8*–251 (A/T) polymorphism on the risk of developing gastric carcinoma, using case control studies from two populations of differing ethnic backgrounds.

Subjects and Methods: We used a 5′ nuclease assay to genotype the *IL-8*–251 A/T polymorphism in two gastric cancer case control studies: (1) a White population gastric cancer case control study consisting of 306 gastric cancer cases and 211 controls and (2) a Japanese gastric cancer case control study consisting of 237 gastric cancer cases and 98 controls. Odds ratios and 95% confidence intervals (CI) were calculated and logistic regression was used to adjust for confounding variables.

Results: Carriage of the pro-inflammatory *IL-8*–251 A allele in the White case control study was not associated with an increased risk of developing gastric carcinoma (OR = 1.006, 95% CI 0.7 to 1.5). No significant differences were observed when the cases were subdivided into cardia (OR = 0.811, 95% CI 0.5 to 1.3) and non-cardia gastric cancers (OR 1.173, 95% CI 0.8 to 1.8). Similarly in the Japanese population carriage of the A allele did not increase the risk of having gastric cancer (OR = 1.166, 95% CI 0.7 to 1.9).

Conclusion: Although carriage of the *IL-8*–251 A allele is associated with a more pronounced inflammatory response in the gastric mucosa of *H pylori* infected subjects and an increased risk of developing pre-malignant changes, it does not appear to alter the risk of developing the eventual outcome of gastric cancer. This applies to populations of differing ethnicity. We postulate that this polymorphism is important at an early stage in the inflammatory response to *H pylori* and may facilitate the action of other mediators in the development of gastric cancer.

034 *COX*-2 GENE POLYMORPHISMS AND ASSOCIATION WITH PREMALIGNANT CHANGES IN THE STOMACH

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Background: Cyclooxygenase-2 (COX-2) plays a number of key roles in carcinogenesis including stimulation of cellular proliferation and angiogenesis and inhibition of apoptosis. COX-2 expression is upregulated in gastric premalignant lesions and adenocarcinomas and this increased expression has been correlated with poor clinicopathological variables. Single nucleotide polymorphisms have been described in the *COX*-2 gene: three promoter polymorphisms (−197 G>C, −765 G>C, and −899 G>C), one exonic (exon 3-8C>G) and one within the 3′- untranslated region (3′ UTR T>C). All polymorphisms are potentially functional and in particular the polymorphism at position −765 affects a putative Sp1 binding site. Carriage of the *COX*-2–765 G allele is associated with higher COX-2 expression, and individuals with the G/G